LATE REVISIONS
Sacramento Municipal Utility District
Rancho Seco Nuclear Generating Station, Unit 1 and Rancho Seco Park
Proposed Tentative Waste Discharge Requirements
Regional Water Quality Control Board, Central Valley Region
Board Meeting – 15/16 March 2007
ITEM #10

1. **In the NPDES permit, Section II.A.**

   Modify the first paragraph of Section II.A., as follows:

   A. Background. The Sacramento Municipal Utility District (hereinafter Discharger) is currently discharging pursuant to Order No. 5-01-182 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0004758. The Discharger submitted a Report of Waste Discharge, dated November 30, 2005**,** and applied for a NPDES permit renewal to discharge ~~up to 14 million gallons per day (mgd) of~~ stormwater, irrigation runoff, treated liquid radioactive wastewater, and treated municipal wastewater from the Rancho Seco Nuclear Generating Station, Unit 1**,** hereinafter Facility.

2. **In the NPDES permit, Section IV.A.1.a , Table 6 (Final Effluent Limitations for Combined Discharge):**

   Modify Table 6, as follows:

Table 6. Final Effluent Limitations for Combined Discharge

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids	mg/L	30	45	60	--	--
pH	Std. Units	--	--	--	6.5	8.5
Copper, Total	µg/L	1.4	--	4.1	--	--
~~Electrical Conductivity @ 25ºC~~	~~µmhos/cm~~	~~110~~	**~~--~~**	**~~--~~**	**~~--~~**	**~~--~~**
Total Residual Chlorine	mg/L	0.01	--	0.02	--	--
Gross Beta Particle Activity	pCi/L	50	--	--	--	--

3. **In the NPDES permit, Section IV.A.1.c. (Final Effluent Limitations for Combined Discharge):**

   Remove the effluent limitation for Monthly Average Discharge Flow (Section IV.A.1.c.) and renumber sections.

   ~~c. **Monthly Average Discharge Flow.** The monthly average combined discharge flow shall not exceed 14 mgd.~~

4. In the NPDES permit, Section IV.A.3.a , Table 8 (Interim Effluent Limitations for Discharge Point No. 001):

Modify Table 8, as follows:

Table 8. Interim Effluent Limitations for Copper

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	--	--	~~10.2~~ 18.5	--	--

5. In the NPDES permit, Section VI.C.1. (Special Provisions):

Add the following as a new paragraph (g):

g. **Completion of Decommissioning Operations.** As described in Finding A.1., radioactive wastes are combined with dilution water from Folsom South Canal and are discharged through Discharge Point No. 001. Because the diluting flow from Folsom South Canal is discharged to provide dilution in lieu of additional treatment of the radioactive wastes, the flow from Folsom South Canal is considered to be part of the waste stream for purposes of this Permit. The Discharger is therefore responsible for any water quality impacts in the discharge at Point No. 001, including any water quality issues associated with water pumped from Folsom South Canal. When the Nuclear Regulatory Commission certifies completion of the decommissioning activities, the flows from Folsom South Canal will no longer be needed for dilution of radioactive waste discharges and will no longer be considered to be part of the wastewater discharge at Point No. 001. At such time, this Permit may be reopened for reconsideration of the compliance points and effluent limitations.

6. In the NPDES permit, Section VI.C.3. (Special Provisions):

Modify Section VI.C.3. as follows:

3. Best Management Practices and Pollution Prevention ~~– Not Applicable~~

a. **Pollution Prevention Plan for Salinity.** The Discharger shall prepare and implement a pollution prevention plan for salinity in accordance with CWC section 13263.3(d)(3) to reduce the salinity of its discharge. The pollution prevention plan shall address sources of salinity from the liquid radioactive waste treatment system and domestic wastewater treatment system, as well as, its discharges of stormwater, irrigation water, and fire protection water. The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, Section VII.B.3.a. A work plan and time schedule for

preparation of the pollution prevention plan shall be completed and submitted to the Regional Water Board **within 6 months of the effective date of this Order** for approval by the Executive Officer. The Pollution Prevention Plan shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

7. In the NPDES permit, Section VII. (Compliance Determination):

Remove Section VII.D.

~~**D. Monthly Average Discharge Flow Effluent Limitations**. The Monthly Average Discharge Flow represents the monthly average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the Monthly Average Discharge Flow effluent limitations will be measured at times when groundwater is at or near normal and runoff is not occurring.~~

8. In the Monitoring and Reporting Program, Attachment E, Section X.D., (Other Reports):

Modify Table E-10, as follows:

Table E-10. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Compliance Schedules for Final Effluent Limitations for copper, compliance with final effluent limitations. (Special Provisions VI.C.7.a.i and VI.C.7.b.i)	**1 June**, annually, until final compliance
Compliance Schedules for Final Effluent Limitations for copper, Pollution Prevention Plan (Special Provisions VI.C.7.a.ii and VI.C.7.b.ii)	**1 June**, annually, until final compliance
Compliance Schedules for Final Effluent Limitations for copper, Treatment Feasibility Study (Special Provisions VI.C.7.a.iii and VI.C.7.b.iii)	**1 June**, annually, until final compliance
Pollution Prevention Plan for Salinity (Special Provisions VI.C.3.a.)	**1 January**, annually, after approval of work plan

9. In the Fact Sheet, Attachment F, Section IV.C.3.m.iii, (Determining the Need for WQBELs):

Modify Section IV.C.3.iii., as follows:

iii. **Salinity Effluent Limitations.** Based on the relatively low reported salinity in the combined effluent, the discharge does not have reasonable potential to cause or

contribute to an in-stream excursion of water quality objectives for salinity. ~~However, since the receiving water is tributary to the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters. Allowing the Discharger to increase its current salt loading may be contrary to the Region wide effort to address salinity in the Central Valley and Resolution 68-16, which requires that existing high quality waters be maintained until it has been demonstrated that any change will be consistent with the maximum benefit to the people of the State. Therefore, in accordance with Resolution 68-16, this Order includes a performance-based effluent limitation of 136 µmhos/cm for EC as a monthly average to limit the discharge to current levels.~~ The salinity is sufficiently low so as not to present a water quality threat to downstream beneficial uses or an anti-degradation concern. The permit requires salinity monitoring of the discharge to verify that salinity is not increasing and requires the development and implementation of pollution prevention plan to reduce the salinity of the discharge. The effluent limitations for TDS required in the previous Order are therefore unnecessary and have been removed.

10. In the Fact Sheet, Attachment F, Section IV.C.4., Table F-12 (WQBELs Calculations):

Modify Table F-12, as follows:

Table F-12. Summary of Water Quality-Based Effluent Limitations (Combined Discharge Effluent; Discharge Point No. 001)

Parameter	Units	Effluent Limitations				
		Average Monthly	Annual Average	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chlorine, Total Residual	mg/L	0.01	--	0.02	--	--
Copper, Total Recoverable	µg/L	1.4	--	4.1	--	--
pH	SU	--	--	--	6.5	8.5
~~Electrical Conductivity @ 25ºC~~	~~µmhos/cm~~	~~110~~	~~--~~	~~--~~	~~--~~	~~--~~
Tritium	pCi/L	--	20,000[1]	--	--	--
Gross Beta Particle Activity[2]	pCi/L	50	--	--	--	--

[1] Based on Annual Average - The annual average shall be based on the average of at least four consecutive quarterly samples when discharging nuclear waste.

[2] The Discharger shall be deemed to be in compliance with the limit for gross beta activity if the average concentration of beta particle activity and photon radioactivity from man-made radionuclides does not produce an annual dose equivalent to the total body or any internal organs greater than 4 millirems per year.

11. In the Fact Sheet, Attachment F, Section IV.D.3., (Satisfaction of Anti-backsliding Requirements):

Modify Section IV.D.3., as follows:

3. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. All effluent limitations except for boron and total dissolved solids (TDS) in this Order are as stringent as those in the previous Order. The Discharger no longer uses boric acid at the facility and effluent monitoring indicates that boron in the discharge does not exceed water quality objectives. The combined effluent discharge also does not exceed the water quality objectives for TDS. Therefore, there is no reasonable potential to cause or contribute to an in-stream excursion above the applicable water quality criteria for either boron or TDS and no effluent limitations are considered necessary in this Order. This change in effluent limitations is based on new information and is in compliance with Anti-Backsliding Exceptions requirements of CFR 122.44(l)(i)(A), Sections 402(o)(2) and 303(d)(4) of the CWA. The Regional Water Board finds removing the effluent limitations for boron and TDS is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Any impact on existing water quality will be insignificant.

   ~~Effluent monitoring for electrical conductivity (EC) has been reduced from weekly to monthly. The effluent EC is very consistent; therefore, weekly monitoring is unnecessary. This reduction in monitoring is based on new information, which is consistent with the anti-backsliding requirements of 40 CFR 122.44(l)(2)(i)(B)(*1*). The Regional Water Board finds reducing the monitoring frequency for EC is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Any impact on existing water quality will be insignificant.~~

12. In the Fact Sheet, Attachment F, Section IV.D., (Final Effluent Limitations):

Modify Table F-14, as follows:

Table F-14. Summary of Final Effluent Limitations for Combined Discharge

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Conventional Pollutants							
Total Suspended Solids	mg/L	30	45	60	--	--	EP
pH	SU	--	--	--	6.5	8.5	EP, BP
Priority Pollutants							
Copper (Total)	µg/L	1.4	--	4.1	--	--	CTR
Non-Conventional Pollutants							
Acute Toxicity[2]	% Survival	--	--	--	--	--	EP
Chlorine, Total Residual	mg/L	0.01	--	0.02	--	--	EP
~~Electrical Conductivity @ 25ºC~~	~~µmhos/cm~~	~~110~~	~~--~~	~~---~~	~~--~~	~~--~~	~~AD~~
Tritium[3]	pCi/L	20,000	--	--	--	--	EP
Gross Beta Particle Activity[4]	pCi/L	50	--	--	--	--	EP
~~Flow[5]~~	~~mgd~~	~~--~~	~~--~~	~~--~~	~~--~~	~~--~~	

[1] EP - Existing Permit; BP – Basin Plan; CTR – California Toxics Rule; AD – Antidegradation Policy (Resolution 68-16)
[2] Median survival in effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test producing less than 70% survival.
[3] Based on Annual Average - The annual average shall be based on the average of at least four consecutive quarterly samples when discharging nuclear waste.
[4] The Discharger shall be deemed to be in compliance with the limit for gross beta activity of the average concentration of beta particle activity and photon radioactivity from man-made radionuclides does not produce an annual dose equivalent to the total body or any internal organs greater than 4 millirems per year.
[5] ~~The monthly average discharge flow shall not exceed 14 mgd.~~

13. In the Fact Sheet, Attachment F, Section IV.E., (Interim Effluent Limitations):

Modify the second paragraph of Section IV.E., as follows:

The interim limitations for copper in this Order are based on the current treatment plant performance. In developing the interim limitation, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on log-normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (~~*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*~~). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

14. In the Fact Sheet, Attachment F, Section IV.E., (Interim Effluent Limitations):

Modify Table F-16, as follows:

Table F-16. Interim Effluent Limitation Calculation Summary

Parameter	MEC (µg/L)	Mean of logs ~~(µg/L)~~	Std. Dev. of logs	# of Samples	Interim Limitation (µg/L)
Copper	10	-0.537 ~~1.6~~	1.048 ~~2.6~~	~~15~~ 22	~~10.2~~ 18.5

15. In the Fact Sheet, Attachment F, Section VII.B.3., (Special Provisions):

Add subsection b., as follows:

b. **Pollution Prevention Plan (PPP) for Salinity (Special Provisions VI.C.3.a.).** This provision requires the Discharger to prepare and implement a pollution prevention plan for salinity in accordance with CWC section 13263.3(d)(3) to reduce the salinity of its discharge. The pollution prevention plan shall address sources of salinity from the liquid radioactive waste treatment system and domestic wastewater treatment system, as well as, the discharges of stormwater, irrigation water, and fire protection water.